



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,919

08/02/2006

Friedrich Severin Buehler

25045-16

3609

7590
John B Hardaway III
Nexsen Pruet
P O Box 10107
Greenville, SC 29603

02/19/2010

EXAMINER

FREEMAN, JOHN D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/19/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,919	Applicant(s) BUEHLER, FRIEDRICH SEVERIN	
	Examiner John Freeman	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8,27,30,31,33,53,55,56 and 59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8,27,30,31,33,53,55,56 and 59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 56 is objected to under 37 CFR 1.75(c), as being of improper dependent form for depending on a cancelled claim. As there is no indication as to whether "said functional films" in claim 56 corresponds to the "functional film" of independent claim 27, or whether Applicant intended for additional layers of functional films (as indicated by the previous amendment to claim 39), the examiner has not examined the claim with respect to the prior art.
2. Claim 59 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 27 recites "a dicarboxylic acid consisting of 90-100 mole% of an aliphatic dicarboxylic acid...and 0-10 mole% of a material selected from amino acid and lactam." Dependent claim 59 recites "said dicarboxylic acid is cyclohexane dicarboxylic acid." The cyclohexane dicarboxylic acid is not an "aliphatic dicarboxylic acid" as required in the independent claim. Also note the use of the claim language, i.e. "consisting of," which excludes additional materials not recited.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 27, 30-31, 33-38, 53, 55-56, and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 27 recites "said polyamide moulding compound *comprises* in an amount of 0.01 to 5.0%" of a lubricant, and further states "said polyamide moulding compound *consists of*." The scope of the claim is confusing because Applicant uses inclusive language, i.e. comprises, simultaneously with exclusive

Art Unit: 1794

language, i.e. consisting of. It is not clear how the claim should be read. Also note claim 53 recites the composite molded article "comprising 0.01 to 2.0%" of said lubricant.

6. Claim 56 is drawn to claim 39, which is cancelled. Claim 56 recites "said functional films," which is not found in any of the pending claims. It is unclear what relation the polarizing sheets have to the composite molded article.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 27, 30-31, 33, 53, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torre (US 5,696,202) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Lo Giudice et al. (EP 1092747) or Ingersoll (US 3,649,541) or Kato (US 4,908,726) or Kawakami et al. (US 3,850,870) or Ebert et al. (US 6,706,797).

9. Regarding claims 27, 30, and 53:

10. Torre discloses transparent polyamide compounds suitable for molded articles (col 1 ln 4-11). The polyamide's constituents are MACM and a dicarboxylic acid, such as decanedioic or dodecanedioic acids (col 2 ln 28-40). Torre discloses the use of lubricant with the polyamide (col 2 ln 56).

11. Torre is silent with regard to the amount of lubricant used.

12. Lubricants were well-known additives in the art, however, and the claimed range falls within standard ranges. For example, Plachetta discloses thermoplastic polyamide molding materials having lubricants of not more than 2% by weight (col 7 ln 15-20); Stendel disclose a molded article of polyamide having up to 20% by weight of lubricants (col 2 ln 30-42); and Epstein discloses molded articles of polyamide having up to 1.0% by weight of lubricants (col 8 ln 67-68).

13. It has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage

Art Unit: 1794

ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

14. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add lubricants to the molding compounds as taught by Torre to improve the processing properties of the compounds, and further it would have been obvious to arrive at the presently claimed loading range through routine optimization.

15. The references are silent with regard to the use of paraffin or tetracosane lubricant.

16. 2,6,10,15,19,23-hexamethyl tetracosane (also called squalane) was a well-known lubricant at the time of the invention, however. For example, Lo Giudice teaches squalane as a "lubricating/detaching" additive for organic polymers [0009], including polyamides [0011]. Lo Giudice uses squalane in amounts from 0.01-50% [0013]. Many other references teach the use of squalane. Ingersoll teaches the use of squalane in a resin (col 10 ln 62-64) in amounts ranging from 0.1-20% (col 7 ln 4-6); and Kato teaches the addition of liquid paraffins and squalane to a composite plastic in amounts from 0.5-2.0% by weight (col 2 ln 35-44). Furthermore, Kawakami teaches the use of squalane as a mold releasing agent in amounts from 0.5-10% (col 4 ln 11-20), as does Ebert in amounts from 1000-4000 ppm (col 7 ln 51-59).

17. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use squalane and paraffin oils as a lubricant in the composite article given it was a well-known lubricant with understood properties to improve the processing properties, including mold release properties, of the compounds of Torre.

18. Torre and the other references are silent with regard to multiple layers of the molding compound.

Art Unit: 1794

19. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use multiple layers of the polyamide to improve the strength and rigidity of the final molding compounds. That is, it would have been obvious to use additional layers of polyamide for functional purposes.

20. Regarding claim 31:

21. The examiner considers the timing of the addition of the additives to be product-by-process limitation. The examiner submits the final product taught by Torre in view of the other cited references results in the same final product as presently claimed. Torre teaches the use of lubricants with pigments and/or colorants (col 2 ln 55-59).

22. Regarding claim 33:

23. Torre teaches the compounds can be injection molded (col 3 ln 40).

24. Regarding claim 59:

25. Torre teaches the additional use of cyclohexane dicarboxylic acid (col 2 ln 41-44).

26. Claims 34-38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torre (US 5,696,202) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Lo Giudice et al. (EP 1092747) or Ingersoll (US 3,649,541) or Kato (US 4,908,726) or Kawakami et al. (US 3,850,870) or Ebert et al. (US 6,706,797) as applied to claims 27, 30-31, 33, 53, and 59 above, and further in view of or Reed et al. (US 4,927,704).

27. Torre in view of Plachetta or Stendel or Epstein teaches a composite material having lubricant therein as discussed previously.

28. The references are silent with regard to a silicon hard coat.

29. Silicon hard coats were well-known in the art for their abrasion resistance properties. For example, Reed discloses abrasion-resistant plastic articles vapor coated with silicon materials (claim 1). It is clear the hard coats are cured.

30. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply at least one vapor-deposited silicon hard coat to the composite material of Torre to improve the abrasion resistance of the material.

Art Unit: 1794

31. Regarding claim 37:

32. There is no disclosure in Torre that the molding compound is used for optical components.

However, the recitation in the claims that the molded article is "use for optical components" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

33. It is the examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Torre in view of the other cited references disclose a molded article as presently claimed, it is clear that the molded article of the prior art would be capable of performing the intended use, i.e. an optical component, presently claimed as required in the above cited portion of the MPEP.

34. Regarding claim 38:

35. Silicon hard coats are intrinsically scratch-proof.

36. Claims 34-38 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torre (US 5,696,202) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Lo Giudice et al. (EP 1092747) or Ingersoll (US 3,649,541) or Kato (US 4,908,726) or Kawakami et al. (US 3,850,870) or Ebert et al. (US 6,706,797) as applied to claims 27, 30-31, 33, 53, and 59 above, and further in view of Hu et al. (US 5,298,587).

37. Torre in view of Plachetta or Stendel or Epstein teaches a composite material having lubricant therein as discussed previously.

38. The references are silent with regard to a silicon hard coat.

39. Silicon hard coats were well-known in the art for their abrasion resistance properties. For example, Hu disclose a method of forming a protective abrasion resistant coating on a substrate via

Art Unit: 1794

PECVD (col 1 ln 35-37). Hu also discloses the use of sputtering to prepare the surface (col 6 ln 34-42). It is clear the hard coats are cured.

40. At the time of the invention, it would have been obvious to one of ordinary skill in the art to sputter a surface and apply at least one vapor-deposited silicon hard coat to the composite material of Torre to improve the abrasion resistance of the material.

41. Regarding claim 37:

42. There is no disclosure in Torre that the molding compound is used for optical components. However, the recitation in the claims that the molded article is "use for optical components" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

43. It is the examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Torre in view of the other cited references disclose a molded article as presently claimed, it is clear that the molded article of the prior art would be capable of performing the intended use, i.e. an optical component, presently claimed as required in the above cited portion of the MPEP.

44. Regarding claim 38:

45. Silicon hard coats are intrinsically scratch-proof.

Response to Arguments

46. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

47. Applicant submits Plachetta relates to opaque materials and therefore "transparency is of absolutely no concern" to the reference (p9). Applicant submits Stendel and Epstein also have little no concern for transparency.

Art Unit: 1794

48. The examiner notes the cited references are merely provided to show one of ordinary skill would arrive at the presently claimed amounts of lubricant through routine experimentation. While Plachetta, Stendel, and Epstein do not disclose all the features of the present claimed invention, they are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely lubricant loadings, and in combination with the primary reference, disclose the presently claimed invention.

49. Applicant then attempts to show the references used to teach the use of squalane as a lubricant, Lo Giudice, Ingersoll, Kato, Kawakami, and Ebert, similarly have "no concern" for transparency.

50. First, the examiner notes there is no indication from the references that squalane, an inherently transparent oil, would have a negative impact on the transparency of the given material.

51. Second, the main reference, Torre, teaches transparent articles can be made with lubricants.

52. Finally, Applicant notes Ebert is "specific to materials for DVD and CD's" (p10). Clearly this field of endeavor requires transparency to be effective.

53. Applicant also states "the art does not contain, even in this large number of references, any teaching which teaches both the specific lubricant and the amount to be used" (p10). The examiner notes the "large number of references" have been cited to show the conventionality of squalane in polyamide, as well as the loading values presently claimed. Each of the references could be relied upon solely for the rejections as is apparent from the alternative language: there is no need to follow a "tortuous path of references" as asserted by Applicant (p11).

54. Applicant asserts an artisan would not look to Reed to achieve transparency (p13). First, the examiner notes the claims do not require the scratch-proof coating to be transparent. Second, Reed clearly teaches the use of such coatings for transparent articles, e.g. a transparent glazing (col 14 ln 4).

55. Applicant makes similar arguments against Hu (p14). First, the examiner notes the claims do not require the scratch-proof coating to be transparent. Second, Hu clearly teaches the use of such coatings for transparent articles, e.g. windows (col 8 ln 26).

Art Unit: 1794

Conclusion

56. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman
Examiner
Art Unit 1794

/John Freeman/
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794